

REMARKS:

Claims 1-6, 8-10 and 24-31 are pending.

For the convenience of the Examiner, attached at the end of this document is a clean "Claims Appendix" of the current wording of all pending claims.

Reconsideration, retraction of the rejection and allowance of this application are requested in view of the following. ,

The Examiner's Response to Arguments section of the Office Action notes that the claimed invention "does not require that the sliding motion is provided after the healing takes place". Applicant has amended the independent claims to recite that relative slidable motion between the bones along the fibroblast which formed over the resected bone is maintained following the resorption of the implant. This is not possible with the Cohen implant because the implant is eventually "replaced by mature fibrous tissue .... that will stabilize the toe and serve to maintain digital length ...." (Column 2, lines 27-34). When Cohen's implant is resorbed, a body of fibrous tissue without any sliding surfaces remains between the opposing ends of the bones.

The independent claims are now explicitly limited, amongst others, to a method for treating a joint "so that slidable motion between the bones is permanently maintained". Claim 1 recites, amongst others, "using the joint while resorbing the implant and causing slidable motions between the face and the cancellous bone surface; and forming fibroblast at the cancellous bone joint surface while using the joint so that the fibroblast progresses into fibrocartilage as the implant is resorbed, the fibrocartilage replaces the implant during such resorption, and thereafter relative slidable motion between the bones along the fibrocartilage occurs when using the joint". The other independent claims 8 and 24-26 are similarly limited, although the exact wording differs slightly to reflect different terminology used in the claims.

Since Cohen has no corresponding disclosure and does not generate and permanently maintain functioning, slidable surfaces as recited in the independent claims, the claims are neither anticipated by nor obvious over Cohen.

In regard to the anticipation rejection of most of the claims before they were amended as discussed above, applicant points out that it is plain from the drawings of Cohen, and the description, that rods 2 which project from ball 4 extend into holes drilled in the opposing bone surfaces. When such an implant is in place, it is impossible to attain slidable motion between the bone surface and the opposing ball surface. To obtain slidable motion, the rods would have to be sheared off, thereby destroying the implant before it fulfilled its function. This observation is also fully supported by the Blatt and Smith Declarations on file.

The argument that "the ball (4) provides a sliding surface for the joint ends" (page 3 of the Office Action) is without any support and impossible, as demonstrated in the preceding paragraph.

It is equally without any support "that one viewing this embodiment would be led to the conclusion that the ball (4) obviously functions as a stop and sliding surface for the resected bone ends because the joint flexes and extends around the ball surface", as is asserted on page 3 of the Office Action. At a very minimum, to attain a sliding surface, the rod protruding from the ball would first have to be sheared off, thereby destroying the implant. Slidable motion between the ball and the opposing ball with a solid rod extending from one into the other is a physical impossibility irrespective of what the patent says, although, applicant points out, the patent does not make such a statement

It is also incorrect, as asserted on page 3 of the Office Action, that "the whole document, especially Col. 3, lines 18-20; Col. 4, lines 3-39 and Figures 1-3 and 8-11" support the assertion that Cohen's ball provides a sliding surface. Reading the whole document demonstrates the exact opposite. Sliding surfaces between the bone ends do not exist; in fact they are not even desired by Cohen.

In view of the foregoing, applicant submits that the claims as amended herein are neither anticipated by nor obvious over Cohen, because Cohen does not teach to provide a sliding surface between the implant and the bone surface, discloses structure which positively prevents the formation of such a sliding surface, and teaches an implant which will lead to the nonslidable connection between the opposing bone ends by the "mature fibrous tissue"


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(column 2, lines 28-29) which "forms around the implant, and replaces the implant ...."  
(column 2, lines 45-46).

Accordingly, all claims are in condition for allowance, and a corresponding notification at an early date is requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

  
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**MARKED-UP VERSION OF THE CHANGES TO THE CLAIMS**

1. (amended) A method for treating a joint formed by opposing bones having first and second mating joint surfaces so that relative slidable joint motion between the bones is permanently maintained comprising the following steps:

removing at least a portion of the first joint surface to expose a cancellous bone surface;

selecting a [totally] bioresorbable implant having a face adapted to face the [removed portion of the first joint] cancellous bone surface;

placing the bioresorbable implant between and in contact with the [first and] second joint surface[s] and the cancellous bone surface so that the face is opposite the [first joint] cancellous bone surface and the implant initially keeps said exposed cancellous bone surface spaced apart from the second joint surface while permitting relative slidable motion between the face and the [first joint] cancellous bone surface;[ and]

using the joint while resorbing the implant and causing slidable motions between the face and the cancellous bone surface; and

[whereby the cancellous bone surface initially forms] forming fibroblast at the [first joint] cancellous bone surface [which] while using the joint so that the fibroblast progresses into fibrocartilage as the implant is resorbed, [so] the fibrocartilage [effectively] replaces the implant during such resorption, and thereafter relative slidable motion between the bones along the fibrocartilage occurs when using the joint.

8. (amended) A method for treating a substantially non-weight bearing arthritic joint having first and second mating joint surfaces so that relative slidable joint motion between the bones is permanently maintained comprising the following steps:

removing at least a portion of the first and second joint surfaces to expose first and second cancellous bone surfaces;

selecting a bioresorbable implant having first and second implant faces corresponding to the first and second cancellous bone surfaces;

placing the first and second implant faces of the bioresorbable implant between and against the first and second exposed cancellous bone surfaces so as to permit relative slidable motion between the first and second faces and the first and second [joint] cancellous surfaces;[ and]

using the joint and causing slidable motions between the face and the first cancellous surfaces; and

[whereby fibroblast is initially formed which progresses into] while using the joint forming fibrocartilage at each said cancellous bone surface as the implant is resorbed[,] to thereby [effectively replacing] replace the implant during such resorption and enable slidable motion between the bones along the formed fibrocartilage.

9. (amended) The method of claim 8 wherein the selecting step is carried out by selecting said bioresorbable implant having a generally semi-spherically shaped [joint] surface as the first implant surface.

24. (five times amended) A method for treating at least one degenerated surface on a cancellous bone, the cancellous surface being one of first and second relatively slidably movable surfaces defining a body joint, so that slidable joint motion between the bones is permanently maintained, the method comprising the steps of resecting the bone to form [a] the at least one degenerated cancellous bone surface, placing a bioresorbable implant between the [first] at least one degenerated cancellous bone surface and the second surface[s] to thereby space the surfaces apart, providing the implant with at least one face which is opposite and shaped complementary to at least one [of the first and second surfaces] degenerated cancellous bone surface so that the implant can slidably move relative to the at least one [of the first and second surfaces] degenerated cancellous bone surface, allowing the face to slidably move relative to the at least one [of the first and second surfaces] degenerated cancellous bone surface, permitting growth of fibroblast on the at least one cancellous surface and conversion of the fibroblast into fibrocartilage during the allowing step, maintaining a spacing between the body joint defining surfaces during the permitting steps, and waiting for the body to gradually resorb the implant during the allowing and permitting steps so that, upon resorption of the implant, the fibrocartilage forms at least one of the body joint defining surfaces and slidable motion between the bones along the fibrocartilage occurs.

25. (thrice amended) A method for treating a joint having first and second mating joint surfaces so that slidable joint motion between the bones is permanently maintained comprising the following steps:

removing at least a portion of the first joint surface to generate an exposed [a] cancellous bone surface;

placing a bioresorbable implant between and in contact with the [first and] exposed cancellous bone surface and the second joint surface[s] so the implant initially keeps said exposed cancellous bone surface spaced apart from the second joint surface;

providing the implant with a face which is opposite the [first] exposed cancellous bone surface;

permitting relative slidable motion between the face and the [first] exposed cancellous bone surface; [ and]

using the joint[, which includes] while resorbing the implant and slidably moving the face relative to the [first] exposed cancellous bone surface;

[whereby the cancellous bone surface initially forms] forming fibroblast which progresses into fibrocartilage while using the joint as the implant is resorbed [so the fibrocartilage effectively replaces the implant during such resorption] and continuing to slidably move the face relative to the exposed cancellous bone surface;

following the resorption of the implant continuing to slidably move the second surface along the formed fibrocartilage;

estimating the period of time it will take for the fibroblast to progress into fibrocartilage; and

selecting the bioresorbable implant of a size, shape and material according to said period of time.

26. (thrice amended) A method for treating a joint having first and second mating joint surfaces carried by cancellous bone so that slidable joint motion between the bones is permanently maintained comprising the following steps:

removing at least a portion of the first joint surface to expose a cancellous bone surface;

forming a cavity into the medullary canal of the cancellous bone carrying the second joint surface;

selecting a bioresorbable implant configured to fit between the [first] cancellous bone surface and the second joint surface[s], the implant having a face, a backside and a stem portion extending from the backside and configured to fit within said cavity;

inserting the stem portion into the cavity and placing the bioresorbable implant between the [first] cancellous bone surface and the second joint surface[s] so the implant initially keeps said surfaces spaced apart and the face is slidably movable relative to the [first joint] cancellous bone surface;[ and]

using the joint while resorbing the implant, including slidably moving the face relative to the [first joint] cancellous bone surface; and

[whereby the cancellous bone surface initially forms] forming fibroblast which progresses into fibrocartilage while using the joint as the implant is resorbed [so the fibrocartilage effectively replaces] to replace the implant [during such resorption] and maintain relative slidable motion between the bones along the fibrocartilage.